

Applicants: Anatoliy V. Tsyrganovich  
Serial No.: 08/937,877  
Filing Date: September 29, 1997  
Docket No.: ZIL-183

**Amendments to the Claims:**

This listing of claims replaces all prior versions and listings of claims in the application.

**Listing of Claims**

1-3. (canceled)

4. (currently amended) A circuit comprising:

a first circuit portion connected to a first input, the first circuit portion including at least one delay element; and

a second circuit portion attached to the first circuit portion, the second circuit portion including at least one delayed signal input from the at least one delay element, and an adjustment input, the adjustment input not passing through the at least one delay element, wherein when there is no adjustment input, the circuit acts as a filter, and wherein the adjustment input changes the level of the output without the adjustment signal being filtered, wherein the second circuit portion includes at least one coefficient circuit connected to one of the at least one delayed signal inputs and to the adjustment input, and wherein the output of the at least one coefficient circuits is to a second delay element and the output of the second delay element is sent to the at least one coefficient circuits.

5. (currently amended) A circuit comprising:

a first circuit portion connected to a first input, the first circuit portion including at least one delay element; and

a second circuit portion attached to the first circuit portion, the second circuit portion including at least one delayed signal input from the at least one delay element, and an adjustment input, the adjustment input not passing

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through the at least one delay element, wherein when there is no adjustment input, the circuit acts as a filter, and wherein the adjustment input changes the level of the output without the adjustment signal being filtered, wherein the second circuit portion includes at least one coefficient circuit connected to one of the at least one delayed signal inputs and to the adjustment input, and wherein the coefficient circuit includes an input summer and a gain amplifier having a gain.

6. (canceled)

7. (currently amended) A circuit comprising:

a first circuit portion connected to a first input, the first circuit portion including at least one delay element; and

a second circuit portion attached to the first circuit portion, the second circuit portion including at least one delayed signal input from the at least one delay element, and an adjustment input, the adjustment input not passing through the at least one delay element, wherein when there is no adjustment input, the circuit acts as a filter, and wherein the adjustment input changes the level of an output without the adjustment signal being filtered, wherein the first input and the output are phase representations, and wherein the adjustment input causes an integer multiple of  $2\pi$  shift in the output signal.

8-9. (canceled)

10. (previously presented) A circuit comprising:

a first circuit portion connected to a first input, the first circuit portion including at least one delay element; and

a second circuit portion attached to the first circuit portion, the second circuit portion including at least one delayed signal input from the at least one delay element, and an adjustment input, the adjustment input not passing

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through the at least one delay element, wherein when there is no adjustment input, the circuit acts as a filter, and wherein the adjustment input changes the level of the output without the adjustment being filtered; and

adjustment control logic adapted to provide the adjustment input, wherein the adjustment control logic is adapted to produce a minus  $2\pi$  adjustment signal if a tested signal is greater than a positive reference value and produce a positive  $2\pi$  adjustment signal if the tested signal is less than a negative reference value.

11. (canceled)

12. (currently amended) A circuit comprising:

a digital filter including input lines giving signal values at different time indexes, gain amplifier circuitry adapted to multiply the signal values by filter coefficients, and a summer connected to the gain amplifier circuitry to produce an output value; and

summing circuitry connected to the input lines of the signal values at different time indexes and to an adjustment input, wherein the output of the summing circuitry ~~being~~ is sent to the gain amplifier circuitry.

13. (currently amended) A method comprising:

providing a circuit;

inputting an input signal into the circuit such that the circuit filters the input signal to provide a filtered component to the output of the circuit;

inputting an adjustment signal into the circuit so that the adjustment signal provides an unfiltered offset that is added to the output; and

adding the adjustment signal to the input signal to provide an delayed output signal; and

adding the delayed output signal to the adjustment signal and the input signal.

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14. (original) The method of claim 13, wherein the adjustment signal keeps the output within a preset range.
15. (original) The method of claim 13, wherein the filtering of the input signal is a low-pass filtering.
16. (original) The method of claim 13, wherein the input is a phase signal.
17. (original) The method of claim 13, wherein the input is a hue signal.
18. (previously presented) A method comprising:
  - constraining a phase signal within a finite preset range, the constraining step including adding a correction signal to the phase signal to produce an output;
  - adding a delay to the output;
  - feeding back the delayed output so that it is added to the correction signal and the phase signal; and
  - filtering the phase signal without filtering the correction signal portion of the phase signal.
19. (previously presented) The method of claim 18, wherein the filtering of the modified phase signal is a low-pass filtering.
20. (currently amended) A method comprising:
  - constraining a phase signal within a preset range, the constraining step including adding a correction signal to the phase signal; and
  - filtering the phase signal without filtering the correction signal portion of the phase signal, wherein the correction signal is an integer multiple of  $2\pi$ .

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21. (currently amended) A method comprising:

    constraining a phase signal within a preset range, the constraining step including adding a correction signal to the phase signal; and

    filtering the phase signal without filtering the correction signal portion of the phase signal, wherein the preset range is zero to  $2\pi$ .

22. (currently amended) A method comprising:

    constraining a phase signal within a preset range, the constraining step including adding a correction signal to the phase signal; and

    filtering the phase signal without filtering the correction signal portion of the phase signal, wherein the preset range is zero to  $2\pi$  plus a guard band.

23. (original) The method of claim 22, wherein the guard band is a reference value above or below the range zero to  $2\pi$ .

24. (original) The method of claim 23, wherein the guard bands are  $-\pi$  to zero and  $2\pi$  to  $3\pi$ .

25. (original) The method of claim 18, wherein the constraining step is such that the phase signal is processed so as to use a differential input.

26. (currently amended) A method comprising:

    constraining a phase signal within a preset range, the constraining step including adding a correction signal to the phase signal; and

    filtering the phase signal without filtering the correction signal portion of the phase signal, wherein the constraining step is such that the phase signal is processed so as to use a differential input, and wherein the differential input is offset by an integer multiple of  $2\pi$  so as to reduce the absolute value of the differential input.

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27. (original) The method of claim 18, wherein the phase signal is a hue signal.

28. (currently amended) An apparatus comprising:

    circuitry to constrain a phase signal within a finite preset range using a correction signal[[;]], wherein the correction signal is an integer multiple of  $2\pi$ , and

    a filter adapted to filter the phase signal without filtering the correction signal contribution, and to add the correction signal to the phase signal.

29-30. (canceled)

31. (previously presented) An electronic circuit comprising:

    a delay which receives an input signal and outputs a delayed input signal;

    a first adder which outputs a first corrected signal by adding a correction signal to the input signal;

    a second adder which outputs a second corrected signal by adding the correction signal to the delayed input signal; and

    a third adder which outputs an output signal by adding the first corrected signal and the second corrected signal.

32. (previously presented) A circuit comprising:

    a first circuit portion connected to a first input, the first circuit portion including at least one delay element; and

    a second circuit portion attached to the first circuit portion, the second circuit portion including at least one delayed signal input from the at least one delay element, and an adjustment input, the adjustment input not passing through the at least one delay element, wherein when there is no adjustment input, the circuit acts as a filter, and wherein the adjustment input changes the level of the output without the adjustment being filtered; and

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adjustment control logic adapted to provide the adjustment input, wherein the adjustment control logic is adapted to produce a minus  $2\pi$  adjustment signal if a tested signal is greater than a first reference value and produce a positive  $2\pi$  adjustment signal if the tested signal is less than a second reference value.

33. (currently amended) A circuit comprising:

a first circuit portion connected to a first input, the first circuit portion including at least one delay element; **and**

a second circuit portion attached to the first circuit portion, the second circuit portion including at least one delayed signal input from the at least one delay element, and an adjustment input, the adjustment input not passing through the at least one delay element, wherein when there is no adjustment input, the circuit acts as a filter, and wherein the adjustment input changes the level of the output without the adjustment being filtered; and

adjustment control logic adapted to provide the adjustment input, wherein the adjustment control logic is adapted to produce a positive  $2\pi$  adjustment signal if a tested signal is greater than a first reference value and produce a minus  $2\pi$  adjustment signal if the tested signal is less than a second reference value.

34. (currently amended) A method comprising:

providing a first circuit portion connected to a first input, the first circuit portion including at least one delay element; **and**

providing a second circuit portion attached to the first circuit portion, the second circuit portion including at least one delayed signal input from the at least one delay element, and an adjustment input, the adjustment input not passing through the at least one delay element, wherein when there is no adjustment input, the circuit acts as a filter, and wherein the adjustment input changes the level of the output without the adjustment being filtered; and

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providing an adjustment input to produce a minus  $2\pi$  adjustment signal if a tested signal is greater than a first reference value and produce a positive  $2\pi$  adjustment signal if the tested signal is less than a second reference value.

35. (currently amended) A method comprising:

providing a first circuit portion connected to a first input, the first circuit portion including at least one delay element; **and**

providing a second circuit portion attached to the first circuit portion, the second circuit portion including at least one delayed signal input from the at least one delay element, and an adjustment input, the adjustment input not passing through the at least one delay element, wherein when there is no adjustment input, the circuit acts as a filter, and wherein the adjustment input changes the level of the output without the adjustment being filtered; and

providing an adjustment input to produce a positive  $2\pi$  adjustment signal if a tested signal is greater than a first reference value and produce a minus  $2\pi$  adjustment signal if the tested signal is less than a second reference value.